

REMARKS

The independent claim 1 is amended to sharpen the definition of the invention relative to the newly-applied prior art; and the independent claim 14 is amended to introduce an editorial correction requested by the Examiner.

Turning now to the issues raised in the outstanding Official Action, the amendment made to claim 14 noted above is done in response to the observation made by the Examiner at Item 2 of the Official Action, and is believed to correct the noted informality.

At Item 4 of the Official Action, claims 1-8 and 14-19 were rejected under the first paragraph of 35 USC §112, as allegedly being "single means claims." That rejection is respectfully traversed, for the following reasons.

None of the pending claims is written in "means plus function" format in the first instance. As the Examiner is aware, the absence of the term "means" in a patent claim gives rise to a presumption that the claim is not in means-plus-function format. See, for example, *Watts v XL Systems, Inc.*, 232 F.3d 877, 56 USPQ2d 1836 (Fed. Cir. 2000). The Official Action nowhere establishes wherein the facts of the present case are sufficient to rebut that presumption.

Moreover, even if the observation were valid with respect to claim 1, it would plainly be inapplicable with respect to claims 2-8, 18 and 19 which depend therefrom, given that each

of those dependent claims explicitly recites additional elements in combination with the recited "device for reducing mutual interference...."

As to claim 14 and claims 15-17 dependent therefrom, claim 14 plainly recites structure in the form of a dummy data generating circuit, for example..

Still further, the independent claim 1 is explicitly directed to a "system" and not merely to a single component, which system includes not only the recited device for reducing mutual interference, but also, at a minimum, an optical fiber transmitting line.

From the above, therefore, it is believed that the rejection of the claims under the first paragraph of 35 USC §112 as allegedly reciting a "single means" cannot properly be maintained. Favorable reconsideration and withdrawal of that rejection are accordingly respectfully requested.

At Item 6 of the Official Action, claims 1-4, 18 and 19 were rejected as allegedly being anticipated by BOSOTTI 4,267,590. That rejection is also respectfully traversed, for the reasons that follow.

The Official Action points to clock and phase shifters SF2-SFn in Figure 1 of BOSOTTI as allegedly teaching the reduction of mutual interference among a plurality of wavelengths which are transmitted through the same optical fiber transmitting

line, with further reference to column 2, lines 2-53; column 3, lines 6-67; column 4, lines 1-30 and the abstract.

However, in those embodiments of the invention as to which BOSOTTI was considered to be relevant, the object to be staggered differs in scale from the object to be staggered in BOSOTTI, as described below.

One purpose of certain preferred embodiments of the present invention is to stabilize the transmission quality on a wavelength-division multiplexing optical transmission system by avoiding the occurrence of phase modulation among the multiplexed wavelength channel signals, which can be avoided by suppressing the interference among the plurality of wavelength signals.

Present claim 1 as amended herewith recites a device for reducing mutual interference among a plurality of wavelength channel frames, which are transmitted through a same optical fiber transmitting line in order to accomplish the purpose.

Present claim 3 further recites, among its alternative structures, a unit for mutually differing the frame phase between at least two or more wavelength channel signals among a plurality of wavelength channel signals which are transmitted through a same optical fiber transmitting line.

By contrast, the purpose of the invention described in BOSOTTI is to suppress cross-talk due to light leakage from the neighboring wavelength channel.

BOSOTTI staggers substantially half a signal period of each data stream, so that a peak on one channel coincides with a trough on the other channel. See, for example, claim 1 ("... by substantially half the signal period of each of said data streams"), claim 2 ("... staggered by substantially half a signal period") and column 2, line 14 ("Conversely, cross-talk is at a minimum when these data streams are relatively offset by half a signal period so that a peak on one channel coincides with a trough on the other channel").

As noted above, however, those aspects of the present invention as to which BOSOTTI was considered relevant, differ from the reference from the point of view of the object of staggering. The object of staggering in preferred embodiments of the invention is the "frame phase." On the other hand, BOSOTTI staggers half a signal period of each data stream, so that a peak on one channel coincides with a trough on the other channel - i.e., BOSOTTI staggers not on a frame basis, but rather on a bit-by-bit basis. Consequently, those aspects of the present invention as to which BOSOTTI was considered relevant, differ fundamentally from the reference regarding the scale of the object to be staggered.

For purposes of illustration, it is noted that a typical signal frame consists of thousands of bits. For example, a frame period of SONET/SDH format is 8 kHz, and one frame consists of about 300,000 bits when the bit rate is 2.5 Gb/s.

Under such conditions, staggering half a signal period of each data stream, as described in BOSOTTI, would be very difficult to realize without providing an exact phase shifter.

On the other hand, those aspects of the present invention as to which BOSOTTI was considered relevant do not require an exact phase shifter, because those aspects stagger only the "frame phase."

As noted above, claim 1 as amended herewith better brings out this distinction between the invention and the applied reference.

Consequently, it is believed to be apparent that none of claims 1-4, 18 and 19 as they now appear in the case can properly be regarded as being anticipated by BOSOTTI.

At Item 8, claim 14 was rejected as allegedly being unpatentable over BOSOTTI. That rejection is also respectfully traversed, for the following reasons.

The rejection of claim 14 consists of the conclusory allegation that it would have been obvious to "obtain a dummy data generating circuit in order to maintain correlation of the data pattern between the channels to secure stable transmission quality." However, such a conclusory allegation does not provide the requisite factual basis on which to support a rejection of a patent claim for obviousness.

In particular, no evidence of record, for example, a secondary reference properly combined with BOSOTTI, supports the contention on which the rejection is based.

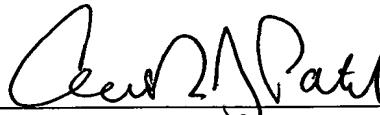
Accordingly, it is believed to be evident that the obviousness rejection of claim 14 is improper as a matter of law, and should therefore be withdrawn.

Applicant notes with appreciation the indication of allowable subject matter in claims 5-8 and 15-17. In the light of the present amendment and the foregoing remarks, it is believed to be apparent that all of claims 1-8 and 14-19 as they now appear in the case are in condition for allowance. Allowance and passage to issue of the application on that basis are accordingly respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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